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December 8, 2016 | CHES-1615

# Impact of Tobacco in Wyoming

*2016 Annual Summary*

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This publication is supported by Tobacco Settlement Funds. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Wyoming Department of Health.

#### CITATION

WYSAC. (2016). *The impact of tobacco in Wyoming: 2016 annual summary* by L. H. Despain, S. K. O'Donnell, & J. R. Simpson. (WYSAC Technical CHES-1615.) Laramie, WY: Wyoming Survey and Analysis Center, University of Wyoming.

*Short Reference:* 2016 Annual Summary.

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# Introduction

*The Impact of Tobacco in Wyoming: 2016 Annual Summary* provides data on the prevalence of tobacco use and data associated with the four goals of the Wyoming Tobacco Prevention and Control Program:

- Reduce youth initiation
- Reduce exposure to secondhand smoke
- Promote tobacco cessation
- Minimize disparities in the burden of tobacco use.

This *Annual Summary* also includes a discussion about the health and economic burdens of tobacco use in Wyoming. In reporting the data, the Wyoming Survey & Analysis Center (WYSAC) at the University of Wyoming uses the data sources' conventions for ascertaining statistical significance and for reporting confidence intervals. Using those criteria (generally an alpha of .05 for statistical tests or 95% confidence intervals), WYSAC identifies as significant only differences or relationships that have been identified by the data sources as statistically significant or where confidence intervals do not overlap. The references list at the end includes information for materials cited in this document.

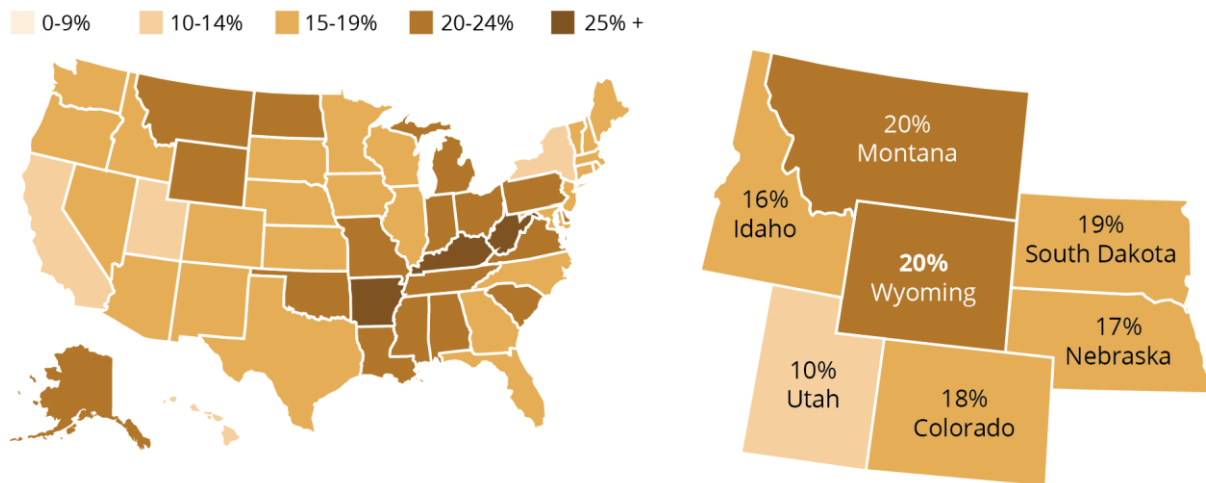
# Prevalence of Tobacco Use

## *Adult Cigarette Smoking*

Current smokers are those who reported smoking at least 100 cigarettes in their lifetime and currently smoke every day or some days. According to the 2014 Behavioral Risk Factor Surveillance System (BRFSS), 20% of Wyoming adults smoke, slightly higher than the national median<sup>1</sup> of 18%. Wyoming, South Dakota, Montana, and Nebraska are in a statistical tie for the highest smoking rate in the region defined by Wyoming and the six bordering states (Figure 1). The smoking rate in Wyoming has declined since 2011, when the smoking rate was 23%.

**Figure 1: One Fifth of Wyoming Adults Smoke**

*Percentage of adults who smoke*



## *Adult Use of Other Tobacco and Electronic Nicotine Delivery Systems (ENDS)*

Compared to the national median, a greater proportion of Wyoming adults use smokeless tobacco. In 2014, 5% of Wyoming adults reported using chewing tobacco, snuff, or snus every day, compared to 2% of U.S. adults (BRFSS, 2014).

Electronic nicotine delivery systems (ENDS; also known as e-cigarettes, e-cigs, or vape-pens) are battery powered devices that produce a vapor by heating a liquid instead of producing smoke

<sup>1</sup> The national medians are from the 50 states, the District of Columbia, and all U.S. territories. Medians, as reported by BRFSS, do not have confidence intervals to use in comparing national and Wyoming estimates.

from burning tobacco. Contents of the liquid vary across products, and some models allow for customized liquids. Many ENDS liquids contain nicotine. In 2014, 20% of all Wyoming adults had tried ENDS at least once (WYSAC, 2014), compared to 13% nationally (Delnevo et al., 2016). Overall, 7% of Wyoming adults used ENDS daily or some days (WYSAC, 2014), compared to 4% nationally (Delnevo et al., 2016). The majority (66%) of Wyoming adults who reported ever trying ENDS said they tried them out of curiosity. Other common reasons for trying ENDS included using them in places where tobacco is not allowed and to replace, cut down, or quit other tobacco products (WYSAC, 2014b). The U.S. Food and Drug Administration (FDA) has not approved any ENDS as a cessation aid (FDA, 2013).

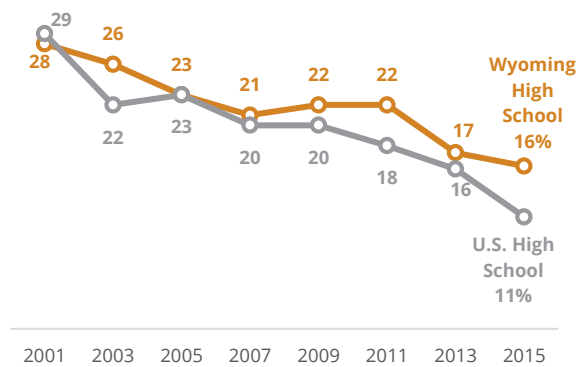
In 2012, 48% of Wyoming adults and 34% of U.S. adults had tried cigars or cigarillos at least once. Of those who had tried cigars or cigarillos, 8% of Wyoming adults and 0.1% of U.S. adults had smoked them at least once in the past 30 days (U.S. Department of Health and Human Services [USDHHS], Substance Abuse and Mental Health Services Administration [SAMHSA], Center for Behavioral Health Statistics and Quality, 2014; WYSAC, 2014a).

### Youth Cigarette Smoking

In Wyoming and in the United States, the cigarette smoking rate among high school students has declined since 2001, based on smoking on one or more of the 30 days prior to being surveyed. In each year, the Wyoming and national smoking rates have been similar (Figure 2; Youth Risk Behavior Surveillance System [YRBSS], 2015).

**Figure 2: Youth Cigarette Smoking Has Declined**

*Percentage of high school students who smoke cigarettes, 2001-2015*



Source: Youth Risk Behavior Surveillance System (YRBSS), 2015

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### Youth Use of Other Tobacco and Electronic Nicotine Delivery Systems (ENDS)

In 2015, 12% of Wyoming high school students used smokeless tobacco in the past 30 days. This rate was significantly higher than the national rate of 7% (YRBSS, 2015).

Overall, 49% of Wyoming high school students had ever used ENDS in 2015 (the first year the YRBSS included questions about ENDS), similar to the estimate of 45% nationwide. However, a greater percentage of Wyoming high school students (30%) are current ENDS users when compared to the national estimate (24%).

Wyoming high school students reported using cigars, cigarillos, and little cigars (13% of students) similarly to the U.S. average (10% of students) based on smoking them on at least one of the 30 days prior to being surveyed (YRBSS, 2015).

# Youth Initiation

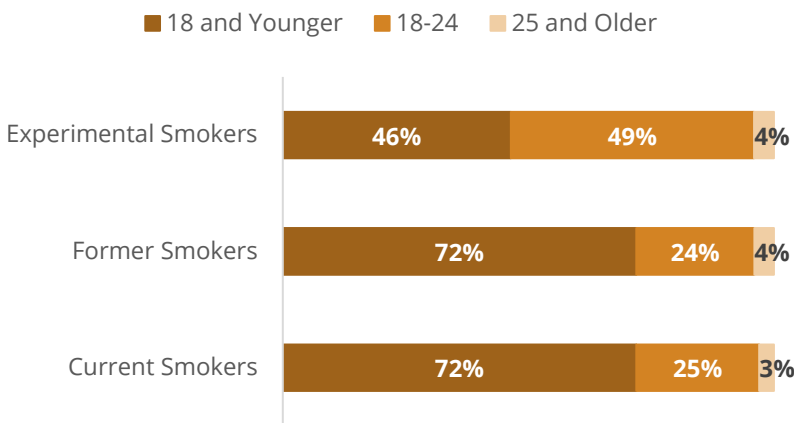
## *Initiation as Reported by Smokers*

Smoking initiation is defined as the age at which a person first smokes one whole cigarette. According to the Wyoming YRBS (2015), more students in 10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> grades reported smoking initiation at 15 or 16, compared to other ages.

Most Wyoming adults who are or have been smokers began smoking before the legal age of 18.

### **Figure 3: Most Current and Former Smokers Began Before Legal Smoking Age**

*Age of initiation of current, former, and experimental smokers, 2012*



Few smokers, former smokers, or experimental smokers reported starting smoking after the age of 24 (Figure 3). Among current smokers, the age of smoking initiation appears to be increasing. Between 2010 and 2012, the percentage of current smokers who reported first smoking a whole cigarette before turning 18 decreased by 14 percentage points. In the same timeframe, the percentage of smokers who reported first smoking a cigarette between the ages of

Note: Experimental smokers are adults who have smoked fewer than 100 cigarettes in their lifetime, but did try smoking at some point. Percentages don't add to 100% due to rounding.

Source: WYSAC, 2014a.

18 and 24 increased by 13 percentage points (WYSAC, 2014a).

Experimental smokers have smoked fewer than 100 cigarettes in their lifetime, but did try smoking at some point. Similar percentages of experimental smokers first smoked a cigarette before the legal age of 18 and between the ages of 18 and 24 (WYSAC, 2014a).

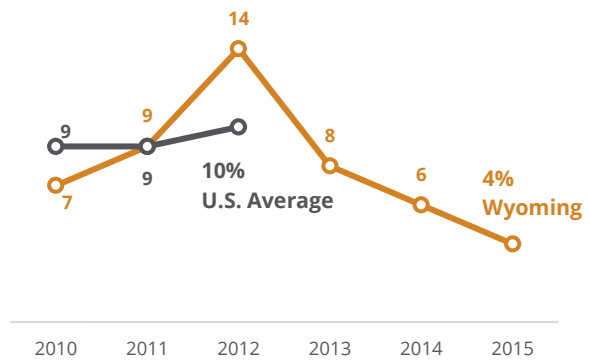
## Preventing Youth Access

Part of the approach to preventing youth initiation of tobacco use is to limit access to tobacco products (Centers for Disease Control and Prevention, Office on Smoking and Health [CDC-OSH], 2014). SAMHSA requires states to complete annual, random, unannounced inspections of tobacco retailers, known as Synar inspections. SAMHSA requires the noncompliance rate for Synar inspections to be below 20% (SAMHSA, 2010).

During Wyoming’s Synar inspections, trained 16- and 17-year old inspectors use standardized protocols to attempt to purchase cigarettes or smokeless tobacco from a sample of Wyoming tobacco retailers accessible to minors. Violations during Synar inspections do not result in actual sales, so citations are not issued.

Wyoming’s Synar results have been similar to the national violation rates (Figure 4). In 2012, Wyoming’s Synar noncompliance rate was unusually high at 14% because one geographic area had a high violation rate. Since 2007, clerks not asking inspectors for identification has been the strongest predictor of retailer violations (WYSAC, 2015b).

**Figure 4: Synar Weighted Retailer Violation Rates (RVRs), 2010-2015**



Note: In 2010 and 2011, Youth inspectors included 15-year-olds. Chewing tobacco inspections were about one-fifth of all Wyoming inspections in 2010-11 and one-third in 2012-15. U.S. data are unavailable for 2013 and beyond.

Source: SAMHSA, 2014; WYSAC, 2015b.

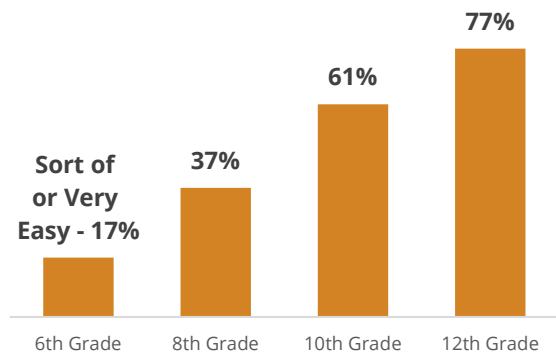
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Each year, the Wyoming Association of Sheriffs and Chiefs of Police (WASCOP) conducts inspections of tobacco retailers. During WASCOP inspections, adolescent inspectors attempt to purchase cigarettes. Unlike Synar inspections, these compliance checks allow law enforcement officers to issue citations to merchants who sell to minors. Violation rates are generally slightly higher for WASCOP inspections (Figure 5) than Synar inspections (WYSAC, 2015c).

Even though retailers are generally compliant with laws restricting youth access to tobacco products (WYSAC, 2015b, 2015c), data show that underage youth access tobacco despite legal restrictions. Sources include relatives, unrelated adults or minors, buying it themselves, taking it, and other non-specified sources (Prevention Needs Assessment [PNA], 2014; YRBSS, 2015).

**Figure 6: Access to Cigarettes Easier for Older Students**

*Percentage of students younger than 18 saying access to cigarettes is easy or very easy, by grade, 2014*

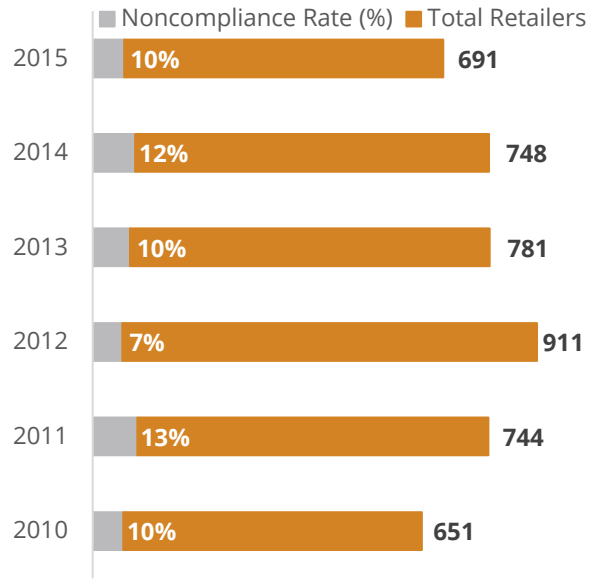


Source: PNA, 2014.

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**Figure 5: WASCOP Retailer Violation Rates**

*Number of retailers checked and noncompliance rates per year*



Source: WYSAC, 2015c.

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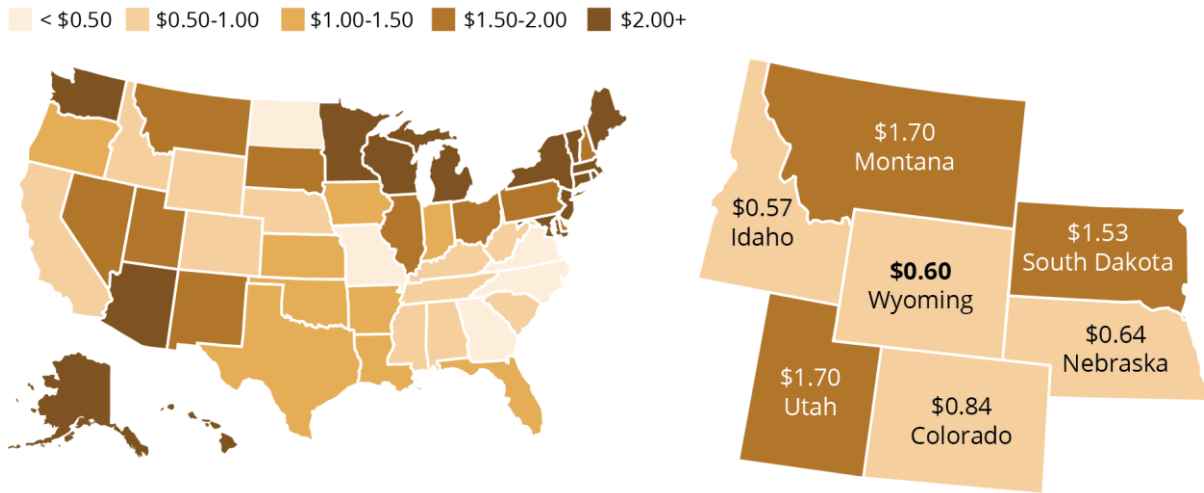
In 2014, 27% of Wyoming middle school students and 65% of Wyoming high school students under the age of 18 said it would be easy (either sort of easy or very easy) to get some cigarettes. Students in higher grades reported easier access to cigarettes than students in lower grades (Figure 6; PNA, 2014). Synar compliance checks in Wyoming have shown that clerks are more likely to sell tobacco to older or older-looking minors (WYSAC, 2015b). Together, these findings suggest that it is easier for youth to purchase or otherwise access cigarettes as they approach the age of 18.



Increasing the price of tobacco products, usually by increasing taxes, is another strategy to reduce youth initiation of tobacco use (CDC-OSH, 2014; Chaloupka, Yurekli, & Fong, 2012; Guide to Community Preventive Services, 2015). The federal cigarette excise tax has been \$1.01 per pack since April 1, 2009. Wyoming last raised the state cigarette excise tax on July 1, 2003, when the rate increased from \$0.12 to \$0.60 per pack. State tax rates vary considerably with a low of \$0.17 per pack in Missouri to a high of \$4.35 per pack in New York (Figure 7). As of January 1, 2016, the average state tax rate on cigarettes was \$1.63 (not including the federal tax; Orzechowski & Walker, 2015). Wyoming’s tax is the 8th lowest in the nation (tied with the tobacco-producing state of Kentucky; CDC, 2016).

**Figure 7: Wyoming’s Cigarette Tax Near Bottom Nationally**

*State cigarette excise tax per pack, 2016*



Source: CDC, 2016.

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Consistent with every state that has implemented a significant cigarette tax increase (Farrelly Nimsch, & James, 2003), Wyoming experienced a decrease in cigarette consumption and an increase in tax revenue when it last raised its cigarette excise tax on July 1, 2003. Wyoming’s cigarette tax revenue increased from \$5.1 million (equivalent to \$6.6 million today, adjusting for inflation) in the fiscal year before the tax increase took effect to \$19.1 million in fiscal year 2014 (Wyoming Department of Revenue [WYDOR], ca. 2014). WYSAC generated a statistical model based on data from 1996 through 2014 that predicts that an additional \$1.00 tax increase per pack could generate a total tax revenue of \$48.3 million during the first year (WYSAC, 2014c).

# Exposure to Secondhand Smoke

## Smokefree Indoor Air

Smokefree indoor air policies and laws have demonstrated effectiveness in reducing youth initiation, reducing exposure to secondhand smoke, and increasing cessation of tobacco use (Guide to Community Preventive Services, 2015). Since the city of Laramie enacted Wyoming’s first smokefree indoor air law in 2005, the coverage and number of these laws in Wyoming have increased (Figure 8). Currently, six cities in Wyoming have comprehensive smokefree indoor air laws. A law in Lyman includes a clause that allows business owners to opt out by prominently displaying signs identifying the business as a smoking establishment (Lyman Municipal Code, 2011). Because WYSAC does not have data about the decisions of all

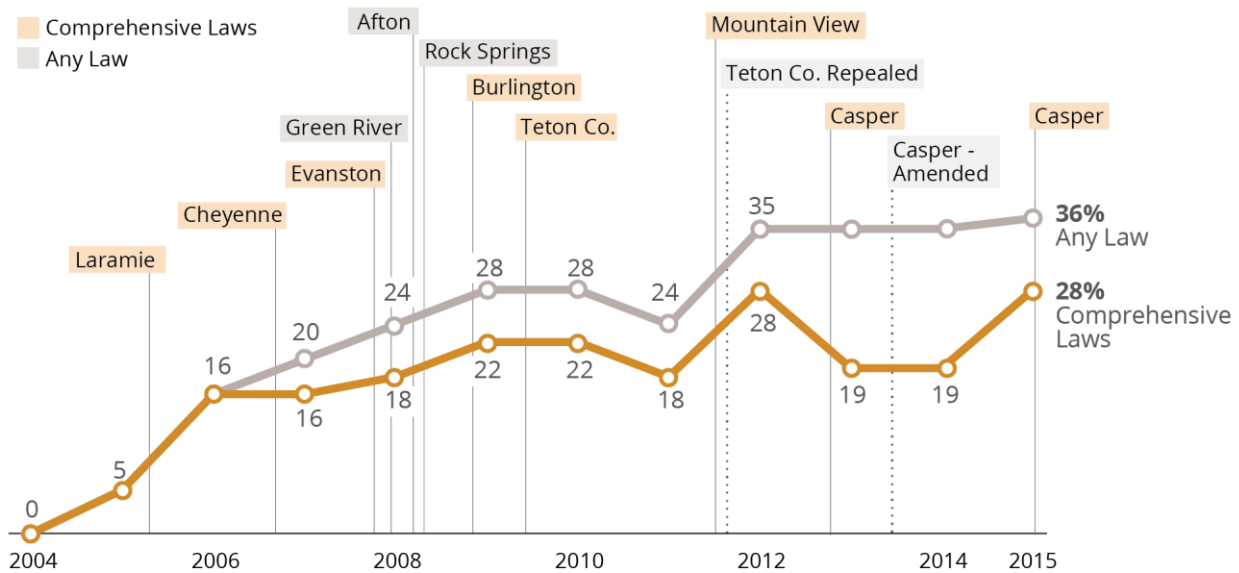
### Smokefree Indoor Air Laws

**Comprehensive** smokefree indoor air laws cover workplaces, restaurants, and bars.

All **other** smokefree indoor air laws in Wyoming cover workplaces and restaurants.

**Figure 8: Wyoming Smokefree Indoor Air Laws Over Time**

Percentage of total state population covered by smokefree indoor air laws by law type



Note: Population percentages for years 2005–2010 were calculated based on 2007 Census estimates; 2011–15 Census estimates are from annual estimates [ca.2014].

Sources: Huelsmann, 2011; Richards, 2015; Walton, 2013; Municipal Codes of Afton, 2008; Burlington, 2008; Casper, 2015; Cheyenne, 2006; Evanston, 2007; Green River, 2007; Laramie, 2005; Mountain View, 2011; Rock Springs, 2008.

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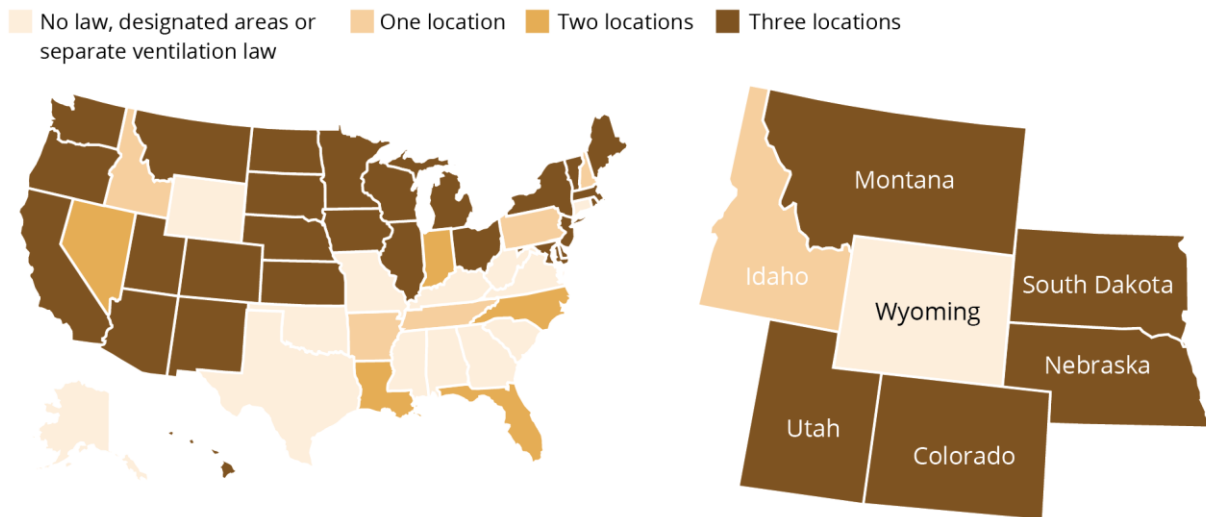
individual business owners in Lyman, WYSAC does not include Lyman residents as covered by a smokefree indoor air law.

## *Smokefree Indoor Air Laws: Wyoming and the Nation*

Wyoming does not have a statewide smokefree indoor air law. However, every one of the six states bordering Wyoming has some sort of statewide smokefree indoor air law (CDC, 2016). Five of the six bordering states have a smokefree indoor air law that covers three locations (private workplaces, restaurants, and bars; Figure 9).

**Figure 9: Wyoming Only State in Region Without a Statewide Smokefree Indoor Air Law**

*Smokefree indoor air laws across the nation*



Note: Locations are private workplaces, restaurants, and bars.

Source: Center for Disease Control, 2016.

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## Smokefree Policies

Voluntary smokefree policies in workplaces, restaurants, bars, and homes also provide some protection from secondhand smoke (Guide to Community Preventive Services, 2015). Wyoming adults generally believe that such policies should be strictly enforced, and they recognize the overall risk of breathing secondhand smoke (Table 1; WYSAC, 2014a).

The 2011 Wyoming Workplace Tobacco Survey documented the existence and implementation of smokefree air policies in Wyoming workplaces with more than 25 employees. Smokefree air policies are most

### Table 2: Smokefree Policies Most Common in Education and Government

*Percentage of workplaces with indoor or indoor & outdoor smokefree policies by field*

	Indoor Only Policy	Indoor & Outdoor Policy
Overall	24%	13%
Education and government	48%	30%
Healthcare / service	25%	17%
Other	23%	6%
Retail / food service	14%	4%
Transportation / construction	10%	4%
Mining, energy, petroleum	9%	2%
Manufacturing	3%	0%

Source: WYSAC, 2011.

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### Table 1: Most Wyoming Adults Want to Avoid Exposure to Secondhand Smoke

*Percentage of adults who...*

Thought breathing <b>secondhand smoke</b> from other people's cigarettes or from other tobacco products is very or somewhat <b>harmful</b> to one's health	96%
Reported that <b>smoking ban policies</b> for <b>indoor</b> public places should be <b>strictly enforced</b>	93%
Reported that <b>smoking ban policies</b> for <b>outdoor</b> public places should be <b>strictly enforced</b>	76%

Source: WYSAC, 2014a.

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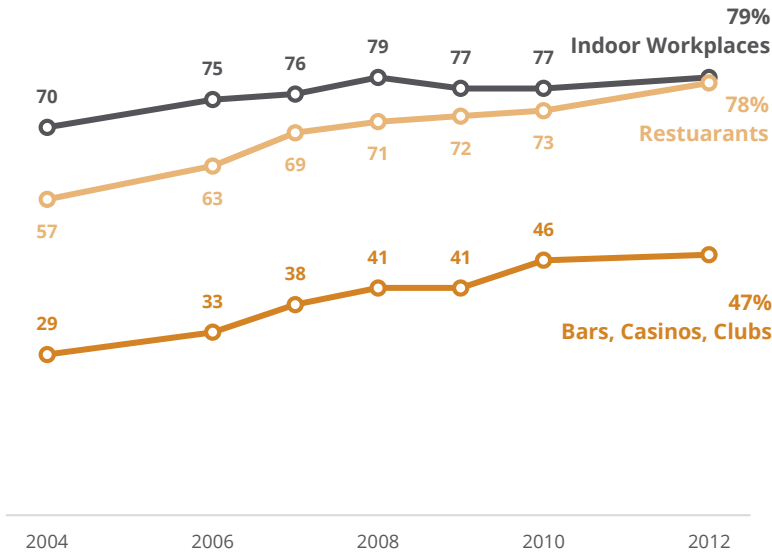
common in the field of education/ government. Of the 640 surveyed workplaces, 24% had a policy prohibiting smoking by anyone at any time indoors; 13% had a written policy that prohibited smoking by anyone, at any time, both indoors and outdoors (Table 2; WYSAC, 2011).

Support for smokefree indoor areas of workplaces; restaurants; and bars, casinos, or clubs has significantly increased since 2004 (Figure 10). In 2012, the majority of Wyoming adults (79%) said that smoking should never be allowed in indoor workplaces, an increase from 70% in 2004 (WYSAC, 2014a). For comparison, in 2010, 82% of U.S. adults reported that smoking should never be allowed in indoor workplaces (King, Dube, & Tynan, 2013).

Support for eliminating secondhand smoke from indoor dining areas of restaurants grew from 57% of Wyoming adults in 2004 to 78%

### Figure 10: Support for Smokefree Indoor Air Policies Increases for All Venues, 2012

Percentage of Wyoming adults who support smokefree indoor areas in...



Source: WYSAC, 2014a.

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adults reported that they would support a law making indoor workplaces smokefree, 78% would support a law making indoor areas of restaurants smokefree, 57% would support a law making indoor areas of bars smokefree, and 58% would support a law making indoor areas of casinos/clubs smokefree (WYSAC, 2014b). In 2014, 71% of Wyoming’s registered voters said they would support a comprehensive statewide smokefree indoor air law (WYSAC, 2015a).

Most Wyoming adults who work primarily indoors are covered by policies prohibiting smoking in the indoor areas of their workplaces, but these policies do not completely protect Wyoming workers

in 2012 (WYSAC, 2014a). For comparison, in 2010, 75% of U.S. adults reported that smoking should never be allowed in indoor dining areas of restaurants (King et al., 2013).

Support for eliminating secondhand smoke from indoor areas in bars, casinos, or clubs grew from 29% of Wyoming adults in 2004 to 47% in 2012 (Figure 10). For comparison, in 2010, 50% of U.S. adults reported that smoking should never be allowed in indoor areas of bars, casinos, or clubs (King et al., 2013).

In 2014, 79% of Wyoming

### Table 3: Most Indoor Workers Covered by Smokefree Air Policies, 2013-2014

Percentage of adult, indoor workers who...

Reported that smoking in <b>indoor areas</b> of their workplace was <b>never allowed</b>	91%
Reported that smoking in <b>outdoor areas</b> of their workplace was <b>never allowed</b>	25%
Had <b>breathed smoke from someone smoking</b> , either indoors or outdoors, at their workplace in the past seven days	20%

Source: WYSAC, 2014b.

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from secondhand smoke (Table 3). Few Wyoming adults allow smoking in their homes (Table 4; WYSAC, 2014b).

According to the *Wyoming 2014 School Health Profiles Report: Trend Analysis Report* (2015), schools qualify as

tobacco-free when there is a policy that specifically

prohibits the use of *all types of tobacco* (including cigarettes, smokeless tobacco, cigars, and pipes, but not necessarily ENDS) *by all people* (all students, faculty/staff, and visitors) *at all times* (including during non-school hours) *and in all places* (including school-sponsored events held off campus). In 2014, 50% of Wyoming schools had tobacco-free policies, a statistically significant increase from 44% in 2008.

**Table 4: Few Adults Allow Smoking in Their Homes, 2012**

*Percentage of adults who...*

Reported that smoking inside their home was never allowed in any place	87%
Had someone (other than themselves) smoking inside their home while they were at home in the past seven days	8%

Source: WYSAC, 2014a.

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# Tobacco Cessation

## *Benefits of Cessation*

Smoking cessation has various short- and long-term health benefits (Table 5). Some health effects of smoking cessation (e.g., increased lung functioning) are evident within a few weeks or months of quitting, suggesting that relatively brief periods of abstinence have health benefits. Others (e.g., reduced risk of stroke) are not fully evident for five years or longer, reflecting the long-term benefits of successful smoking cessation (American Cancer Society [ACS], 2015). Additional research suggests that smoking cessation stops pathogenic processes which lead to cancer (CDC, 2010).

**Table 5: Health Benefits of Cessation over Time**

Time Since Last Cigarette	Benefit
<b>SHORT-TERM BENEFITS</b>	
20 minutes	Heart rate and blood pressure drop
12 hours	Carbon monoxide level in blood returns to normal
<b>INTERMEDIATE BENEFITS</b>	
2 weeks to 3 months	Circulation improves and lung function increases Coughing and shortness of breath decrease
1 to 9 months	Cilia in lungs regain normal function, increasing ability to handle mucus, clean lungs and reduce risk of infection
1 year	Excess risk of coronary heart disease is half that of a continuing smoker
<b>LONG-TERM BENEFITS</b>	
5 years	Risks of mouth, throat, esophagus and bladder cancers cut in half Cervical cancer and stroke risk falls to that of a nonsmoker
10 years	Lung cancer death rate is about half of a continuing smoker Risk of larynx and pancreas cancer decreases
15 years	Risk of coronary heart disease is the same as a nonsmoker

Source: American Cancer Society (ACS), 2015.

## Cessation among Wyoming Smokers

In 2012, 86% of current smokers had made a quit attempt during their lifetime; 55% of those smokers had tried to quit within the previous year (WYSAC, 2014a).

Among current smokers who tried to quit in the previous year, 62% did not use the Wyoming Quit Tobacco Program (WQTP) or proven medications (nicotine replacement therapy [NRT] or prescription medications such as Chantix) during their most recent quit attempt. The most popular cessation aid was NRT: 28% of current smokers who had made a quit attempt within the previous year used NRT (WYSAC, 2014a). Most Wyoming adults said they were aware of cessation quitlines and advertisements for cessation services (Table 6; WYSAC, 2014b).

**Table 6: Most Adults Aware of Cessation Assistance, 2013-14**

*Percentage of Wyoming adults who...*

Were aware of quitline services to help smokers quit	60%
Had encountered advertising about quitting cigarettes in the month prior to being surveyed	75%

Source: WYSAC, 2014b.

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## The Wyoming Quit Tobacco Program (WQTP)

The WQTP assists Wyoming residents who want to quit using tobacco by offering them telephone-based cessation coaching and nicotine replacement therapies (NRTs) or prescription medications. In addition, the WQTP offers online, texting, and email support services. National Jewish Health has been the WQTP service provider since 2013.

In 2015, 67% of Wyoming adults reported having heard of the “Wyoming Quit Tobacco Program or WQTP.” The most well-known WQTP services were telephone coaching and NRTs (Table 7; Tobacco Media Evaluation, 2015).

WYSAC conducts monthly surveys of WQTP enrollees seven months after their enrollment for the Wyoming Department of Health, Public Health Division. Every six months, WYSAC generates a report primarily based on this follow-up survey. In this document, WYSAC presents stable patterns in the results

**Table 7: Telephone Coaching Most Recognized WQTP Service**

*Of the 67% adults having heard of WQTP, percentage who had also heard of...*

Telephone coaching	27%
Free nicotine replacement therapies	25%
Online services	11%
Prescription medication coupons	11%
Non-specific services or services not offered by WQTP	6%

Source: Tobacco Media Evaluation, 2015.

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from those surveys. The most recent version of that report can be found here:

<https://wysac.uwyo.edu/wyomingtobacco/topic/cessation/>.

WYSAC's evaluation of WQTP has found that a plurality of WQTP enrollees hear about the program primarily from healthcare professionals. Many others learn of the program primarily from family members and friends or television.

The majority of people who enroll in the WQTP do so to get help quitting cigarettes, though some seek help quitting smokeless tobacco, ENDS, and/or other tobacco (e.g., cigars, cigarillos, little cigars, hookah, and pipes).

More than half of WQTP enrollees use the combination of medication and coaching. Generally, seven months after enrollment, about one fourth of WQTP survey respondents have succeeded in quitting tobacco use. Success is defined as not having used tobacco in the 30 days prior to completing the survey. Enrollees who use coaching and medication often see the greatest success rates.

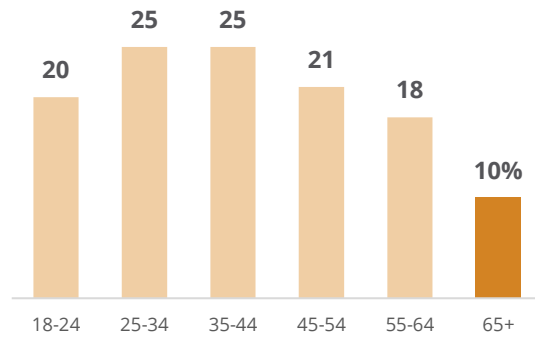
# Tobacco-Related Disparities

## Smoking

Within age and education, two demographic groups stand out as having low smoking rates: adults 65 years of age and older (Figure 11) and adults with a college degree (Figure 12). Wyomingites who are American Indian (including Alaska natives) are significantly more likely to smoke than Wyomingites who are White, Hispanic, or another race, which includes Black or African American, Asian, Pacific Islander, and other races (Figure 13; BRFSS, 2014).

**Figure 11: Smoking Lowest among Adults 65 and Older, 2014**

*Percentage of Wyoming adults who currently smoke by age*

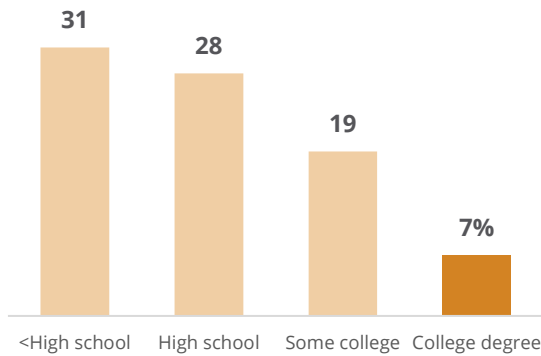


Source: BRFSS, 2014.

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**Figure 12: Smoking Lowest among Adults with a College Degree, 2014**

*Percentage of Wyoming adults who currently smoke by education*

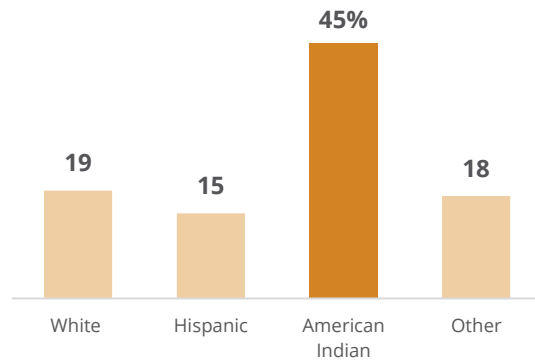


Source: BRFSS, 2014

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**Figure 13: Smoking Highest among American Indian Group, 2014**

*Percentage of Wyoming adults who currently smoke by race*



Source: BRFSS, 2014.

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## Smokeless Tobacco

Unlike smoking (which does not show a statistically significant gender difference), men are more likely than women to use smokeless tobacco (Figure 14; BRFSS, 2014).

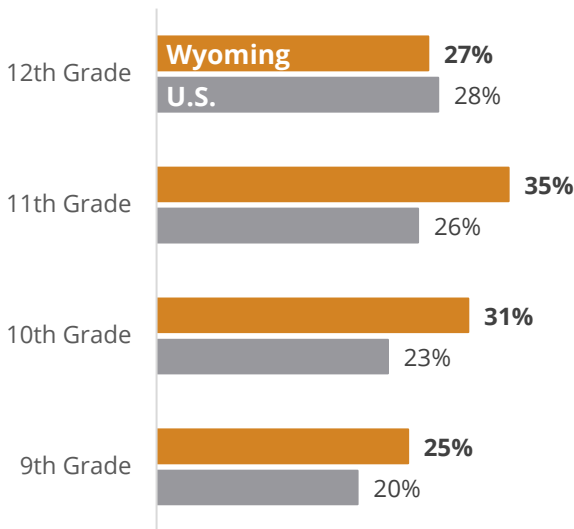
## Disparities among Youth

In each iteration of the YRBSS (2015), high school boys in Wyoming have used smokeless tobacco at a significantly higher rate than high school girls. For boys and girls, the use of smokeless tobacco has significantly declined since 1995 (Figure 15).

In Wyoming in 2015, ENDS use varied by

### Figure 16. High School ENDS use Varies by Grade

Current use of ENDS

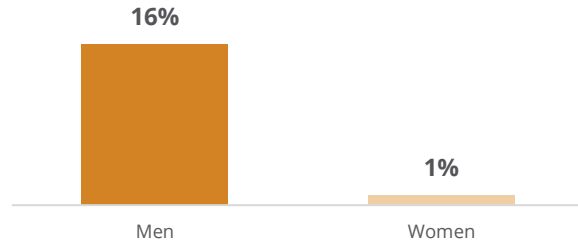


Source: YRBS, 2015

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### Figure 14: Men More Likely to Use Smokeless Tobacco, 2014

Percentage of adults who use chewing tobacco, snuff, or snus

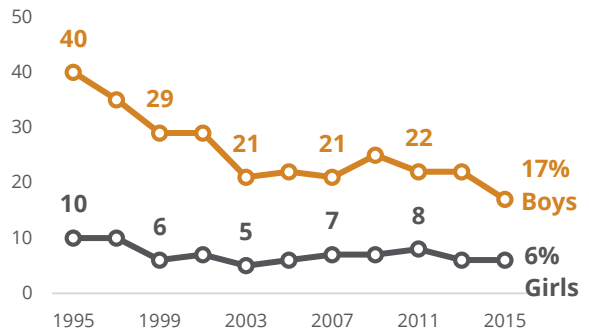


Source: BRFSS, 2014.

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### Figure 15: Smokeless Tobacco Use Highest among High School Boys, 1995-2015

Percentage of Wyoming students who use smokeless tobacco



Source: YRBSS, 2015.

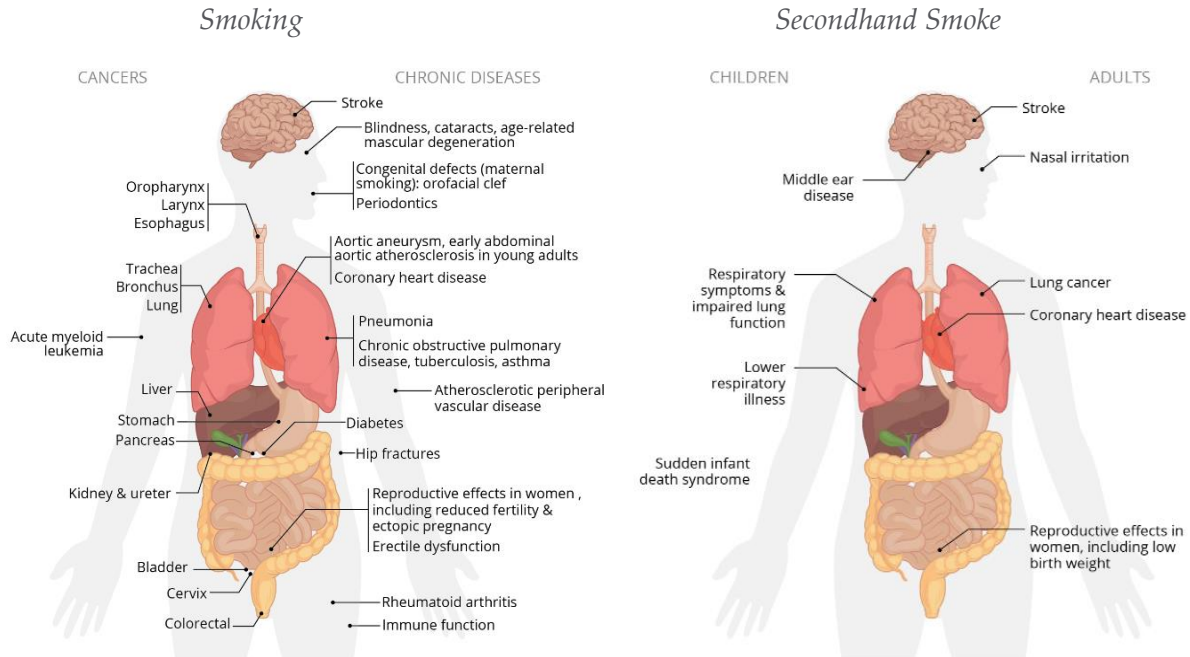
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grade with a non-linear pattern. In the United States for the same year, there was a clearer pattern of current use increasing with grade level (Figure 16; YRBSS, 2015).

# Burdens of Tobacco Use

## Health Burdens

**Figure 17: Health Burdens Causally Linked to Smoking and Secondhand Smoke**



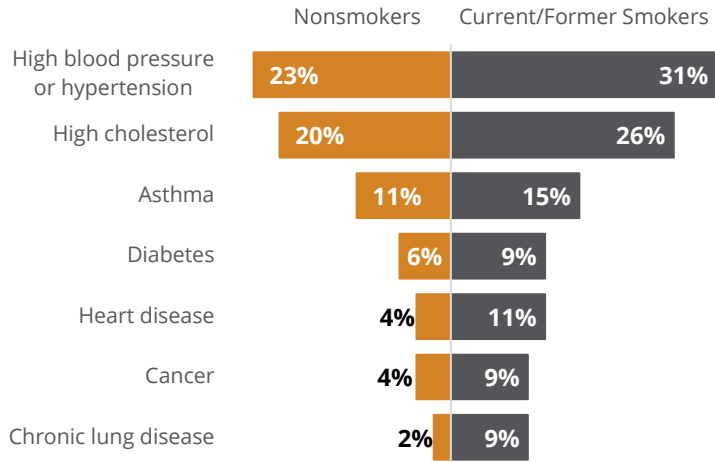
Source: U.S. Department of Health and Human Services (USDHHS), 2014.

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Although there is no safe level of exposure to tobacco smoke, greater exposure increases the risk for and severity of chronic disease. Cigarette smoke contains cancer-causing agents and chemicals linked to biological mechanisms that cause cardiovascular diseases, pulmonary diseases, respiratory diseases, and that contribute to poor reproductive and dental health. More than 7,000 toxic chemicals comprise cigarette smoke, including ammonia, tar, and carbon monoxide. These chemicals increase the risk for developing several preventable chronic diseases for smokers and those who breathe secondhand smoke (Figure 17; USDHHS, 2014).

**Figure 18: Chronic Diseases More Common in Individuals Who Have Smoked**

*Percentage of nonsmokers, current, and former smokers who were told by a healthcare professional they had...*



Note: Nonsmokers are those who have smoked fewer than 100 cigarettes in their lifetime. Current and former smokers are those who have smoked at least 100 cigarettes in their lifetimes. Chronic lung disease does not include asthma; cancer does not include skin cancer.

Source: WYSAC, 2014a.

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Chronic diseases are the leading causes of death and sickness in the United States and Wyoming (Jiaquan et al., 2016). Smoking is the leading preventable cause of chronic disease and death in the United States (USDHHS, 2010). Compared to Wyoming nonsmokers, current and former smokers (combined into one group) were significantly more likely to have been diagnosed with high blood pressure, high cholesterol, asthma, heart disease, chronic lung disease, diabetes, and/or cancer (the survey item excluded skin cancer, but did not specify any other cancers; Figure 18; WYSAC, 2014a).

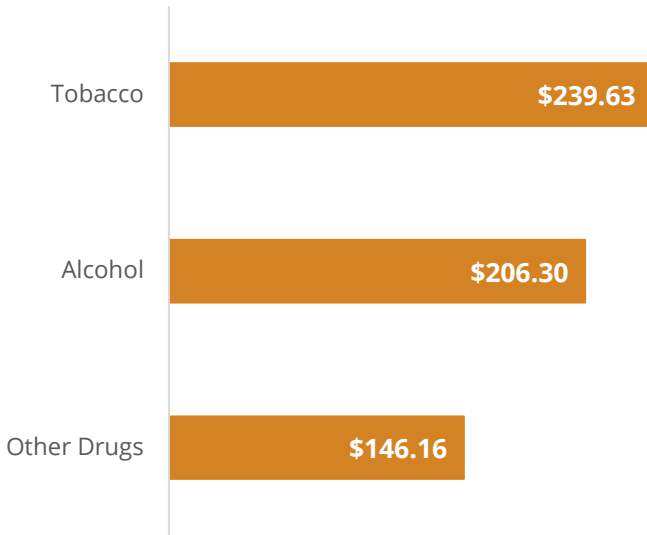
ENDS are a new tobacco-related product, so research on the contents of their liquid, vapor, and health effects is limited. Early studies about the contents of the liquid and vapor show the presence of varying levels of nicotine as well as cancer-causing chemicals such as formaldehyde (American Lung Association, 2015). Overdoses have been reported, including among children, from drinking the nicotine liquid or spilling the liquid on their skin (CDC, 2014). Many of the liquids also contain other chemicals for flavoring, which could be harmful when vaporized and inhaled. Research shows that the use of ENDS negatively affects lung function (Cressey, 2014).

*Economic Burdens*

In 2010, tobacco-related healthcare cost Wyoming nearly \$240 million, including private and public costs, more than alcohol and other drugs (Figure 19; WYSAC, 2012).

**Figure 19: Total Tobacco-Related Healthcare Costs Greater than Alcohol or Other Drugs**

*Annual substance abuse-related total healthcare costs in millions of dollars, Wyoming, 2010*



Source: WYSAC, 2012.

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property loss and occupational disease (USDHHS, 2015). Smokers are more likely to be injured at work than nonsmokers (Craig et al. 2006; USDHHS, 2015).

Smoking is associated with lost productivity nationally (USDHHS, 2015) and in Wyoming. Tobacco cost the state of Wyoming nearly \$450 million in total productivity losses in 2010 (Table 8; WYSAC, 2012).

Smoking workers are generally less healthy and costlier for employers (USDHHS, 2015). When considering aggregate cost and productivity impacts, Berman, Crane, and Munur (2013) estimated that, on average, a U.S. smoker costs \$5,816 more annually than a nonsmoker to employ. Employing smokers is also associated with increased

**Table 8: Smoking Associated with Nearly \$450 Million in Productivity Losses**

*Loss of productivity costs associated with substance abuse in Wyoming in millions of dollars, 2010*

	Impaired Productivity	Hospitalization	Mortality	Total
Alcohol	\$358.04	\$0.77	\$188.69	\$547.50
Tobacco	\$234.57	\$0.91	\$214.44	\$449.92
Other drugs	\$68.81	\$0.38	\$78.81	\$148.00

Source: WYSAC, 2012.

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